

VIRGINIA WILDLIFE

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Commission Photo by H. S. Mosby

Down by the old mill stream. . .

VIRGINIA WILDLIFE

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A Monthly Magazine Dedicated to the Conservation, Restoration, and Wise Use of Virginia's Wildlife and Related Natural Resources, and to the Betterment of Hunting, Fishing and Outdoor Recreation in Virginia

COMMONWEALTH OF VIRGINIA



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Cover

The wild turkey, pictured on this month's cover, is the ultimate in streamlined design except during the breeding season when he sports a "breast sponge." The domestic turkey, by comparison, is heavy and stocky in appearance. Some 58 Virginia counties will be open to turkey hunting this fall.

Photo by Allan D. Cruickshank from National Audubon Society

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Is greed creating another American desert?

IS it possible that certain regions of these great United States are advancing toward a desert condition because of money-hungry businessmen and farmers, vote-hungry politicians, power-hungry bureaucrats and an indifferent public?

It has happened with former civilizations, and in spite of our scorn for history and all our chest-puffing, it could happen here.

Today the worship that has developed for quick profits is etched across the landscape of mid-western Minnesota and the eastern portion of the two Dakotas. Poor land husbandry is evidenced where erosion has exposed the sand subsoil on hundreds of low rolling hills and where the most elemental practices of terracing, strip-cropping and contouring are totally ignored.

But there is one practice that has not been ignored—having allowed the good black land to blow away or slide down hill into the potholes and prairie marshes, the drainage of these wetlands is now occurring on a Gargantuan scale. Who started this wholesale drainage of the prairie wetlands? Who wants it? Who pays for it? What is the justification?

It started in 1936 as a part of the Soil Conservation and Domestic Allotment Act. The theory of the Act was to promote a variety of sound agricultural practices on the land.

Participation is based on paying the landowner for carrying out these land-use practices. The U. S. taxpayer foots a substantial part of the bill. In some instances the county and state contribute and, of course, the landowner is supposed to contribute. In fact the taxpayer not only pays toward financing so-called conservation practices on the land, but guarantees the landowner a price for crops under parity. Common terminology is to the effect that the federal government is paying the bill, but “the government” is the people collectively, and the people are the taxpayers. Waterfowl hunters who are critical of the increasing costs of their favorite sport might well do a mathematical problem and determine just how much of their withholding tax is going into farm subsidies and marshland drainage in particular.

Without debating as to whether farm subsidies to private individuals is a virtue or a vice, some practices have proved sound. But this Frankenstein of subsidies at the expense of the taxpayer grows more confusing with the passage of time and obviously with no solution. Surpluses continue to pile up under the paternal instincts of the Commodity Credit Corporation. Regardless of its first virgin-like intentions, such a tax drain could eventually devour the taxpayer.

The Soil Conservation and Domestic Allotment Act was a New Deal idea that has continued up to and through the present administration. It is purported that \$5.4 billion will go into the so-called farm program of 1959. It is problematical that even the Bureau of the Budget could give a fair figure on the amount of money poured into the program during the past 23 years. But one fact is outstanding: as a bribe to the farmer, the community businessman, to drainage engineers, drainage lawyers and equipment dealers to vote for those politicians who will guarantee bigger and better subsidies, it is an unbeatable gimmick. No block of solons in either party, or combination of them, has had the courage to openly oppose farm subsidies. At best they nibble around the edges and offer new subsidies of a less damaging nature, such as the soil bank, to offset those which are downright destructive. The philosophy of the soil bank is sound, but it is a sad commentary on the American people that they must be bribed to protect the nation's resources.

Many members of Congress realize they have lassoed a wildeat. The problem is not in holding onto it, but in letting it go. However, those who have foisted this tremendous expense onto the American taxpayer, and those who have received payments or benefited, will some day have to stand in judgment before the taxpayer and the conservationists.

—ERNEST F. SWIFT, *Executive Director*
National Wildlife Federation

The past, present and future of

Virginia's Deer Management Program

By STUART P. DAVEY

Assistant Chief, Education Division

GAMEWISE, Virginia might be said to be in the "Era of the Deer." Some 26,841 whitetails—14,812 antlered bucks and 12,029 doe and fawn—were taken during the state's 1958 - 1959 deer hunting season.

Compare these figures with the statewide deer kill figures for 1953 (approximately 11,000) and 1950 (5,700, of which only 500 were doe and fawn) and you get an idea of how handsomely the Virginia game commission's deer program has paid off. Not only has the number of deer in Virginia been increased from a handful to well over 200,000, but deer hunting regulations have been made more lenient, resulting in more man-hours of healthful recreation, more trophy bucks, more hunting area—more pleasure all around!

Where did the deer come from? Who were the key individuals behind the successful restoration program? Let's take a backward glance at the history of the deer restoration program, especially as it has affected deer hunting west of the Blue Ridge Mountains.

Prior to the formation of the Virginia game commission in 1926, the State Game Department, set up in 1916, functioned as well as it could with little money, personnel or public appreciation of the value of the Old Dominion's wildlife resource. At that time there were few deer in Virginia. For example, in 1923, game wardens estimated that only 793 deer were taken in Virginia, including 15 in Alleghany, 10 in Botetourt and nine in Craig. Some

Mr. Davey joined the commission in 1953 as project leader of Upland Game Investigations PR-40-R. He became assistant chief of the education division in 1958.

1,658 deer were harvested in these same three counties last season.

It was during this same period—the middle 20's—that interest in restoring the deer population commenced. Fortunately, beginning about this time, the abandonment of mountain farm land, control of wild fires and the appearance of much new forest growth provided ideal deer food and cover conditions.

On January 29, 1927, at a meeting of the commission in Richmond, a request from Mr. Ray D. Harmon that deer be stocked in the counties of Montgomery, Pulaski and Floyd was presented. The request was denied because of lack of money. Virginia's present 70-million-dollar hunting and fishing business is quite a contrast to the meager amounts spent on fish and game 30 years ago.

That same year, a few deer were shipped collect from the State Game Farm at Windsor Shades to Tazewell and Augusta Counties. ((These deer had been raised at the game farm after having been confiscated by game wardens when captured as fawns.)

On January 26, 1929, the commission appropriated \$125.00 to meet matching funds raised by the local citizens and district forester of the Unaka National Forest (now part of the Jefferson National Forest) to pay transportation charges on deer secured from the Pisgah Game Refuge in North Carolina. The deer were to be liberated near Damascus in Washington County.

More money became available in the early 30's, although still in small amounts. On December 18, 1930, it was agreed by the commission that expenses for deer shipped



This old photo, taken from "The Survival of Restocked Deer in Virginia," a master's thesis written in 1940 by Donald J. Woolley at V. P. I., shows the last deer known to have been killed on John's Creek, Craig County in the early 1920's. While only nine deer were taken by hunters in Craig County in 1923, some 800 were taken in that county last season, the result of a successful restocking program.

to Russell and Scott counties would be split 50-50 with the counties. About this time deer seasons were officially closed in Buchanan, Carroll, Giles, Lee, Pulaski, Scott and Wise counties.

In 1932 the commission authorized the chairman to purchase not more than 100 deer at \$10.00 each from Pennsylvania, the cost to again be split on a 50-50 basis with the counties.

Nearly all of these deer went west of the Blue Ridge. Eastern Virginia has always had deer in most counties bordering the James River, and in some few others. The refuge offered by the Jefferson and George Washington National Forests lured the commission's early action in that direction.

An interesting sidelight in these commission records is the fact that on July 4, 1932, a request was made for a statewide doe season—a request many wish would be made today. For good reason, it was not granted 27 years ago.

A major action took place on August 18, 1932, when 63 counties were closed to deer hunting, hunting deer with dogs was prohibited in all western counties except Craig, and a season of November 15-30 was established (Alleghany, Bath and Craig Counties remained open in the west).

The year 1934 saw part of Shenandoah County opened for a three day season for bucks with visible antlers. This population no doubt had its beginning in West Virginia.

The succeeding years, 1935 and 1936, found public interest rising each month. More counties wanted to participate; more sportsmen wanted to help. In 1936 deer were purchased from Kendall Brothers in North Carolina at \$30.00 each. Superintendent of Game C. O. Handley presented requests from Dickenson, Botetourt, Augusta and Rockingham counties for deer that year. The Virginia Cooperative Wildlife Research Unit, newly formed, was asked to investigate the success of previous deer stocking efforts. Shenandoah and Frederick counties were closed to deer hunting in 1936, partially due to closure of West Virginia areas.

January 4, 1937, saw another turn in the events leading to Virginia's present deer herd. On that day, Commissioner Thomas G. Herring proposed a resolution which stated in effect that some way had to be found to restore deer in the mountains—even if the commission had to raise its own stock.

The possibility of the commission raising its own stock—investigated but deemed too expensive at that time—was made unnecessary by several other events.

One fortunate turn of events was that, in other states, deer were getting more plentiful, making it possible to buy deer at about \$25.00 each from North Carolina and Pennsylvania.

During 1937-1940 Shenandoah and Frederick Counties were reopened, Highland County was opened and the regulations prohibiting deer hunting in the snow were repealed in those areas.

The next major step was an act of the commission on February 9, 1940. A state deer project was approved on that date, with Pittman-Robertson federal aid money now available to cover the costs involved. In the early 1940's,

deer were purchased from Michigan, Wisconsin, Pennsylvania, North Carolina and some other states. The combination of state, federal and national forest stamp monies gave the program needed impetus. U. S. Forest Service personnel, commission game wardens, game managers and the many interested citizens who joined to protect these early investments were successful in establishing the breeding stock, or capital, that has really paid dividends since the close of World War II.

The war period was a time of terrific growth in the deer herds. The original stock of about 1,800 deer west of the Blue Ridge soon grew into a herd of several thousand animals, ranging from Winchester in the northwest to Big Stone Gap in the southwest.

In eastern Virginia, increased citizen interest, better game law enforcement and the timber cutting done during the war set the stage for growth of deer herds in that area, and grow they did.

Since the war even more growth in herd size and in hunter interest have taken place to the point where now nearly 200,000 nimrods stalk whitetails in Virginia every fall. County after county has been reopened until now only seven remain closed.

It was not an easy job to bring the deer back. More effort was expended in the western areas insofar as stocking, citizen interest, public meetings and dog control were concerned because more effort was needed in this area.

Who gets the credit for the establishment of this wildlife resource that now involves thousands of our citizens in one way or another and provides nearly three-quarter



Commission Photo by Kesteloo

Foresters, due many thanks for their initial interest in the deer restoration project, are also due an assurance that the herd will be controlled so that they can grow a crop of timber.



Commission Photo by Kesteloo

The late Justus H. Cline (right) and Editor J. J. Shomon were pictured in 1952 checking deer browse on laurel in the Big Levels Wildlife Management Area in Augusta County.

million man days of recreation just for hunters? Certainly our hat is off to Mother Nature first of all. Given a chance, she can do wonders. Next in line fall hundreds of dedicated sportsmen and friends who gave money, time and labor to either plan, procure or protect the deer in the early days of the program.

Certainly several early members and staff of the Virginia game commission were instrumental—men of vision like Senator A. Willis Robertson and C. O. Handley. Mac D. Hart, executive secretary to the commission for years and dearly loved by all, held a strong position for this program from its conception until his death in 1950.

Never should the interest and the efforts of the U. S. Forest Service throughout the whole program, right up to and including 1959, be overlooked. Without the Service, the program would have failed. Also men like “Uncle Tom” Herring, Justus Cline, Tibbs Clarke, Clemmer Miller and Carl Nolting—just to mention a few—sparked the fire that brought deer back. No doubt the program has succeeded beyond their fondest expectations.

Where do we go from here? The commission has both the responsibility and the desire to manage this living resource that has been so successfully fostered for the benefit of all.

The sportsmen of the state should have the opportunity to fully harvest and enjoy the deer resource.

The foresters are due many thanks for their initial interest and now, even more important, an assurance that the herd will be controlled so that they can grow a crop of timber.

The farmers are due the chance to grow a decent crop

or an orchard, too—and in harmony with a reasonable number of whitetails.

All interests can be best satisfied with a maximum annual harvest of the deer on a sustained level, in a framework of simplified seasons and bag limits. Progress has been made in this latter phase, but the ultimate goal—that of harvesting equal numbers of buck and doe each year from our deer herds—is yet to be reached.

Right now, an annual legal deer take of about 40,000 is both possible and necessary if Virginia is to join the ranks of states that can point with pride to their sound deer management programs.

After an eminently successful deer restoration program, Virginia can and should join the states that have either forgotten or never had a “buck only” law, for truly, in Virginia, we are now in the Era of the Whitetailed Deer.

* * *

Some Alternative Approaches To Deer Management

The real problem in deer management is not deer but human relations. Educational programs should be sponsored to acquaint more people with the facts of deer management so they will understand the problems involved. People need to know what it takes to produce deer, how hunting affects herd size, how much deer cost, how much value society places on deer, and what would happen if different methods of production and harvest were used. Only then can the best management policy be determined; it is not a problem science can solve by itself.

The basic conflict between costs to landowners and benefits to hunters and businessmen is not helped by large numbers of deer and maturing forest growth. These factors lower the natural capacity of woodlands to support deer and increase feeding on high value farm crops and excessive browsing of new forest growth.

It is questionable whether we can continue to afford the luxury of an under-harvested herd under such circumstances. A herd in balance with its natural range practically would eliminate excessive and inequitable costs and yield almost the same economic and recreational benefits.

Another way to solve the problem would be to search for means of transferring economic benefits and costs from one group to another.

It is desirable to sponsor a deer management planning program that brings the views of divergent interests together, because democracy calls for a majority opinion in the execution of government programs. This means that human wants, desires, attitudes, and opinions must somehow find their way into the planning process. Consideration should be given to a planning structure that would let all groups be heard. When this is done administrators can develop a deer management plan that will be more successful and more widely accepted by farmers, businessmen, forest owners, and sportsmen. From *Let's Talk About Deer Management*, published by Cooperative Extension Service, University Park, Pennsylvania.



Commission Photo by Kesteloo

"There is one fly out of thousands of known patterns that takes rainbow, brook and brown trout come cold, heat, drought or flood. Put down in your little book the black gnat as the one supreme trout taker of all time."

Troutdom's Deadliest Fly

By SHERMAN LEE PRUITT

Baltimore, Maryland

NO one angler can ever amass the complete "know all" of trout fishing in one short lifetime. The findings set down here are from over 20 years of cumulative knowledge of trout habits, but if I inadvertently step on some pet trout theories, it is unintentional.

No angler loves to collect flies, reels, trout gear and literature more than I. A well tied royal coachman, blue dun or gray hackle is to me a real work of art. I collect some of these, but there is one fly out of thousands of known patterns that takes rainbow, brook and brown trout come cold, heat, drought or flood. Put down in your little book the black gnat as the one supreme trout taker of all time. In over 20 years of fishing mountain streams in the East, I have turned to the black gnat when all else failed (even bait) and caught trout.

Fish the black gnat as a wet fly, nymph (sparsely tied) or dry fly. It gets fish. I would even go way out on a rotten limb and proclaim that if one used an assortment of black gnats tied on from number 12 to 6 size hooks, no other fly pattern would be necessary, but we all like to vary our lures making for more interesting fishing.

To give a prime example of the gnat's effectiveness, I note in my trout record that for the season of 1957 (April 20 to June 15), the black gnat accounted for 80 percent of the trout I caught. The other 20 percent were

taken on gray hackle (5 percent), grizzly king (8 percent), and the rest on the mickey finn bucktail, size 10.

Trout are heavy feeders on nymphs and other bottom dwellers. While dry flies account for some fish, especially in June when hatches are on the water, the wet fly angler will always take more and larger fish for the simple reason that trout feed mainly below the surface.

Once I fished an eastern mountain stream for four days, using a two-fly cast of size 10 black gnats sparsely tied. I hooked and released trout till I tired of the sport. All the while several hundred brother trouters were canvassed and 20 percent reported heavy catches on the black gnat. Other standard patterns produced sparingly or not at all.

It makes no difference what part of the trout country is fished, the black gnat is a killer wherever used. When used in the mountain streams of Virginia, Maryland, North Carolina, West Virginia and throughout the Southwest, the black gnat catches fish at random. From this writer's experience with the gnat, the brook trout is the most susceptible to this fly, followed by the rainbow and brown trout.

Once, while exploring a small rhododendron-fringed mountain brook, I paused to rest beside a gin clear, rock-ribbed pool just below a small waterfall. While I sat I suddenly noticed a movement on the pebbly bottom.

Closer scrutiny revealed a two-pound rainbow finning the translucent water. I crouched like an Indian scout and bent on the tapered leader a size 12 black gnat (dry). I bow-and-arrowed the fly out and over the pool. It settled like a snowflake, floated about a foot; then the rainbow rose slowly and, with only a small dimple to denote his presence, sucked in the tiny fly. I set the hook, held on, and prayed. My three-ounce, 6½-foot split bamboo must have groaned inwardly. That rainbow broke water at least 20 times, flashing up and down like a living arrow. After about ten minutes of sweating blood, I netted him. The little black gnat was imbedded in the trout's tongue. In the pool above the falls I hooked trout number two, a one-pound native brookie. The two gloriously colored fish I placed in my fern-lined creel after figuratively patting the little black gnat on the back.

My largest rainbow taken on the black gnat was a 22-inch, 3¾-pound male from a southeastern mountain brook; the prize brook trout, a 3-pound, 17-inch specimen from a secluded mountain pond in West Virginia. My biggest brown was a 24-inch specimen taken on a size 8 black gnat fished wet. The fish came from a heavily fished stream near a large southeastern city. The brown struck at dusk and was the largest fish recorded for that season of 1952.

Use the black gnat and results are assured!

* * *

Can a Fish Differentiate Color?

One of the most revealing reports on fishes' abilities to select colors was made by Dr. Frank A. Brown and published in 1937 by the Illinois Natural History Survey. Dr. Brown conducted nearly 15,000 color experiments on large-mouth bass to find out if fishermen were wasting all the thousands of dollars they spent each year on colorful bass lures. In one of his experiments Dr. Brown lowered a glass tube wrapped with a colored band into a tank of the fish. When a bass swam near it he was rewarded with food. Then another tube wrapped with different color was dangled in the tank. But when a fish swam over to this he was given a small electrical shock; it wasn't long before the bass discovered that one color meant chow and the other something quite different. Dr. Brown decided that fish could distinguish among colors about as well as could a human who was looking through a yellow filter. He noted further that his bass were most attracted by red, yellow, white, green, blue, and black—in that order. By far the most commonly used color in bait lines is black. No one has given any reason as to why this should be so. Dr. Brown, in fact, listed black as one of the colors bass could see best. And many bass fishermen wouldn't swap their black surface poppers for divining rods, when it comes to locating strikes.

—TOM FARLEY

Fishing Information Available From Game Commission



The 104-page commission booklet "Freshwater Fishing and Fishlife in Virginia" contains information on the description, distribution, food and habits of 33 fish species. Six pages of the 25-cent publication are devoted to full-color portraits of Virginia's 12 most important game fish. Other booklets available from the commission are "Birdlife of Virginia," an 88-page color-illustrated publication which costs 25 cents, and "A Look at Virginia's Natural Resources," a 68-page school manual, single copies of which may be obtained free from the Commission.

Now available free of charge from the Virginia Commission of Game and Inland Fisheries, Box 1642, Richmond are single copies of many informative leaflets on fish and fishing in the Old Dominion.

Do you want to know where to fish? Ask for "Public Fishing Waters of Virginia," a list by county of all of the stocked waters of the state with information on what fish are present, whether or not boats are available and the size of impoundments.

Directions on how to get to game commission-controlled ponds and state park and forest lakes are included in the commission's 1959 "Summary of Virginia Fish Laws." And low-down on where to fish in various regions of the state is featured in the Virginia Wildlife magazine reprints, "Fishing in Virginia's Tidewater," "Fishing in Virginia's Piedmont," and "Fishing in the Northeast Valley-Mountain Area of Virginia."

Maps of the Back Bay area, Buggs Island Lake and the two national forests in Virginia are available from the commission, as is a map and information sheet on the Gathright Wildlife Management Area in Bath and Alleghany Counties, through which the Jackson River flows.

Bass fishermen should send for "Opportunities for Bass Fishing in Virginia" and "How Well Do You Know Virginia Bass?" Shad enthusiasts can obtain "The Shad in Virginia Waters."

Detailed information and color pictures of Virginia sport fish are presented attractively in the game commission's 25-cent, 104-page booklet, "Freshwater Fishing and Fishlife in Virginia."

Fish pond owners can profit from reading "When You Build Your Fish Pond," "Taking Care of Your Fish Pond," "Weed Control in Small Ponds" and "More Fish from Farm Ponds."

Pollution continues to threaten our freshwater sport fishery. The free publications "Water Pollution in the United States," "Clean Waters from the Hudson to the Potomac" and "The Fight for Clean Waters" are available from the commission.

NATURE KNOWS NO SHORTCUTS



Commission Photo by Kestelon

"As we watch our birds, a balt of destruction in the form of a Cooper's hawk (above) or sharp-shinned hawk swoops down and selects a tidbit for a meal. The hawk is merely harvesting a part of Dame Nature's crap."

By J. EARL COMFORT

WHILE on nature walks, especially on solo jaunts, we are often given to musings concerning the wonders of Nature and her set ways. We have concluded that there are no shortcuts in her plans.

Nature is often accused of cruelty in the way her "balance" is maintained. Strong creatures are pitted against the weak and wounded, and the healthy and cunning prey on the sick and stupid. While the charge usually implies an unnecessary amount of suffering on the part of the victims, it is generally agreed that there is no workable substitute for predation inasmuch as slow but effective adaptation has been taking place since the very beginnings of life on earth.

Mankind notwithstanding, we must admit that there has been progress in the plant and animal kingdoms. As with wildlife, there is a continuous struggle in the plant world for ascendancy. The forests are the ultimate victors under certain conditions, and even then the struggle continues, to establish the kind of tree that will eventually be crowned king.

As most of us have long realized, farm acreage left

fallow may soon be overrun with weeds. The weeds succumb to brush which, in turn, becomes woods, the prevailing type of forest depending on climate and soil. As the forest becomes established, it tolerates various kinds of plantlife beneath its branches including many species of fungi which stand ready to hasten the disintegration of fallen monarchs.

Of course a great forest requires far more than a century of growth, but time is one of nature's lesser worries, or would be if she had any. A century is a short time compared to the countless millions of years required to evolve today's complex mammals from primitive single-celled forms.

Why have some of our present types of creatures such as the cockroach and certain reptiles failed to change materially during the time when countless kindred forms reached their present state of high development? Was it environment? Failure to adapt themselves in the long process of evolution? Or was it Nature's plan to maintain a certain percentage of her ancient types as convenient to her balance? There is no fully-accepted answer to

these controversial questions concerning evolution.

Under certain climatic and soil conditions, vast expanses of prairie grasses take the place of the usual forest succession, with trees moving in only along water courses. Prairie grass gains the ascendancy over tyrant woody growth by preventing tree progress at the outset, since Nature never intended this maligned land of ours to be taken over by trees any more than she intended that our forests should be denuded, leaving the land at the mercy of eroding agents.

The struggle for existence by Nature's creatures, both vegetable and animal, is always in evidence and is ended only by death. A 50-year-old cedar tree on a barren cliff ledge, for example, has never given up the effort although its gnarled growth has been stunted to dwarfish proportions through lack of proper nourishment. Nevertheless, it sent its roots into the rock crevices in search of plant food and moisture to bolster its frame against buffeting winds. Its very act has aided and abetted the process of building up soil, as its roots split the rocks, letting in water which, in winter, freezes, expands and widens the crevice enabling soil to form and accumulate from the freed minerals and decayed vegetation. Finally the noble tree, noble in its efforts at least, succumbs and goes back into the soil it helped create. Its struggle for life was not in vain, as there is no fruitless effort in nature's book, which tolerates no waste other than that to which mankind has so shamefully contributed.

In our contacts with Nature there are apt to be unusual incidents which hold our attention and turn our thoughts into channels that lead to definite conclusions. One of these deals with predation and its effects on wildlife, particularly birds, which occasionally are openly attacked while they are the objects of our observation. We soon learn that wild creatures, though constantly threatened with destruction by predators, are not as predisposed to an unhappy lot as the situation might lead us to believe.

As we watch our birds, a bolt of destruction in the form of a Cooper's hawk or sharp-shinned hawk, those "blue darters" so familiar to the farmer, swoops down and selects a tidbit for a meal. Once a victim is chosen it has little chance for survival unless shelter is nearby. The bloodthirsty predator is not to be denied in most instances as it is adept at pursuing its quarry through thick underbrush and even into brush piles on occasion. Ordinarily it will not permit the presence of a human to interfere with its mission. This is the hawk family that usually captures the unprotected poultry, allowing the blame to be placed upon the more conspicuous soaring *Buteo* "henhawks."

Generally, the great panic caused by the onrushing enemy is evident before the human witness to this everyday wildlife drama is aware of the hawk. While the panic is tremendous, the fear apparently soon subsides and the hushed calm that is caused by the sudden forced inactivity of those that were spared is soon ended as the birds reappear to continue their daily activities as if nothing were amiss and as if their very existence had not been threatened a few minutes earlier. While each succeeding escape from the very jaws—or talons—of death probably serves to sharpen the wits of the survivors against another such attack, there is apparently no long-felt fear such as would have

been instilled in humans who had narrowly escaped such a destruction.

Fortunately, wildlife has a short memory of these dangers or those in constant dread of a recurrence of the attack might starve to death or become weakened in general rather than submit to the possibility of another such onslaught. Obviously, they are adapted to carry out their everyday danger-threatened existence routine, alert to danger but refusing to let stagnation set in. This is a necessary behavior with which Nature has endowed her creatures. The hawks as well as foxes and other predators are merely harvesting a part of Dame Nature's crop that might otherwise suffer from overpopulation resulting in starvation and disease. To her this harvest is of no more significance than that of a farmer's cow that is harvesting grass or the harvesting of an oversupply of poultry, livestock or field crops, and predation should leave us with no more compunction than the farmer at harvest time, hard as it may be to subscribe to that theory.

Coming back to balance and overabundance, predation reminds us that Nature is never wasteful in spite of the fact that her creatures may produce in an apparent great overabundance. A familiar example is the single codfish which produces a million eggs a year—a far greater number, of course, than is necessary to perpetuate its kind. The excess eggs and young become food for other creatures which, in turn, are devoured or would otherwise overproduce. It was never intended that all the eggs should hatch and reach maturity to reproduce again as this process would soon fill the oceans beyond capacity. This holds true in all the reproductive schemes of Nature not excluding mankind, where disease and warfare have prevented him from overpopulating the earth to a greater degree than he has to date. Only among humans are the sick, weak and mentally deficient permitted to reach maturity to perpetuate the race.

Among the so-called lower creatures, only the fit are apt to reach maturity, thus building an immunity against disease and establishing a better type mentally and physically. To state an example, when the head of a wild herd becomes weak or incapacitated otherwise, it is usually succeeded by one of the more capable aspirants to its claim, thereby perpetuating a more vigorous race. While "survival of the fittest" may be an overworked phrase, it is still quite apropos and remains one of the most dependable weapons against decay except where man is concerned. We strongly suspect that Mother Nature's attitude is, "The less said about mankind, the better."

The same overproduction situation occurs among spores, seeds and fruits that are so abundant they could never all find space for competent growth. We know most of this surplus is eaten as food by birds and other wildlife. Squirrels, which feed on acorns and other nuts, also aid in seed dissemination by planting surplus gatherings which they may fail to claim.

The urge to reproduce is exemplified by plants' attempts to set seed against odds. You may have noticed how the tall uncut crabgrass will set seed in the proper season. Cut the grass each week and you will notice that the seed is still formed between each cutting in the waning season. There



To Nature, wild creatures that become food victims (such as the bobwhite taken by the cat, above) have served the same purpose as fruit, seeds or carrion taken as food.

will be ample seed on stems less than an inch in height until they are apparently all seed. The same applies to Alpine vegetation, where perpetuation is keynoted even among tiny trees that survive in spite of adverse conditions. Without this perpetuation all forms of life have failed Nature.

Carrying capacity determines the amount of animal life that can exist on an area and there can be no true balance beyond that capacity. Predation and disease help take care of the surplus wildlife, while vegetable matter serves as food for the survivors which propagate their kind. Balance is as simple as that, despite our failure to accept that fact as demonstrated by our needless overproduction of food and livestock and our useless attempt to maintain

an oversupply of game by thoughtless destruction of nature's allies, the predators. One of the most foolish practices is the desire to control predation on fish which often results in a disastrous oversupply of useless stunted fish.

The question is still before us: Is Nature cruel? There will always be criticism of her methods of furnishing food, especially that taken by hawks, snakes and turtles. At times the victims no doubt do endure suffering before death ends the agony. Generally, death is sudden when a hawk strikes, but slowly-swallowed snake prey may endure tortures before the merciful end is reached. Some wasps paralyze their victims, the insects later serving as food for young wasps. Do the paralyzed victims suffer? Who has the answer?

There is little criticism concerning the insect consumption by birds regardless of the amount of suffering that may ensue before nestlings finally devour the offering. Evidently there is no concern for the lowly insect such as is shown for a bird or animal taken by a hawk, snake, other reptile or carnivorous animal.

So we conclude that Nature has no more compunction for death of her wildlife victims of predation than for the destruction of vegetable matter. To her, wild creatures that become food victims have served the same purpose as fruit, seeds or carrion taken as food. In her eyes the hawk is as blameless as the vulture that shuns live creatures. Each serves her in its own way. We must be reconciled to the fact that Nature recognizes no outright live-and-let-live attitude.

Three Reports on the Waterfowl Situation

... from the Fish and Wildlife Service

A call to the duck hunter to have enough faith in the future of the sport to contribute his three dollars for a duck stamp even though the hunting prospects for this fall look pretty grim has been made by D. H. Janzen, Director of the Bureau of Sport Fisheries and Wildlife, Fish and Wildlife Service.

He explained explicitly the probable plight of the waterfowl resource. A severe drought in the duck production areas of Canada and the two Dakotas has dried up 50 to 80 percent of the potholes around which the millions of ducks gather annually to nest and hatch their young. Unless something entirely unforeseen happens, that condition "is likely to force us to curtail the hunting season this fall—we will have no choice but to recommend severe restrictions on waterfowl hunting."

Janzen indicated that not only was the drought taking a terrific toll in the 1959 crop of young birds but that it could also contribute to the loss of a race which the Bureau of Sport Fisheries and Wildlife is making against time in the acquisition of habitat for duck wintering and nesting.

... from Ducks Unlimited

Information received by Arthur Bartley, executive director of Ducks Unlimited, indicates the breeding stock

return to the nesting grounds was satisfactory. "While it is true that drought conditions exist in the southern areas previously used by waterfowl in Saskatchewan and Alberta, there are still some water areas in addition to those built by Ducks Unlimited and other agencies that are holding many birds and producing effectively," Bartley said.

According to reports recently received from Ducks Unlimited Canadian headquarters in Winnipeg, there has been an increase of breeding pairs of ducks and geese migrating to northern areas of the provinces where water is available.

... from the National Wildlife Federation

"Even the most optimistic say that the situation is bad. Estimates of how bad vary. I am not ready to make mine. Too many variables must be considered. At this time, I am unwilling to say more than the following: Much of the breeding population has been forced to shift to new unfamiliar habitat. Production is abnormally late. Water conditions become worse each day. The conditions are alarming. How alarming may well be determined by the behavior and success of birds which have shifted north of the agricultural lands of Canada," says H. R. Morgan.

VIRGINIA WILDLIFE

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

THREE GAME COMMISSIONERS REAPPOINTED. Governor J. Lindsay Almond, Jr. has reappointed to six-year terms on the Virginia Commission of Game and Inland Fisheries, T. D. Watkins of Midlothian, Holman Willis, Jr. of Roanoke, and Homer G. Bauserman of Arlington. Watkins has served on the game commission since 1947. Bauserman and Willis were first appointed in 1953.

COMMISSION HIRES NEW FISH BIOLOGIST. James Harold Padfield, 33, of Leeds, Alabama, began work July 1 as a Virginia game commission fish biologist. Hired to handle fish division research and management projects in the northwest section of the state, he will live with his wife and three sons in the Harrisonburg area. A Navy veteran of World War II, the new biologist has a B.S. degree in biology from the University of the South and a M.S. degree in fish management from Alabama Polytechnic Institute. He has been employed as a fish biologist in Tennessee, assistant professor at Alabama Polytechnic Institute, hatcheries supervisor for the state of Georgia, and fish culturist for two commercial fish producers.

NEW SUPERINTENDENT AT MONTEBELLO FISH HATCHERY. Loven V. Seaman, state game commission employee since 1939, took over the reins of the Montebello Fish Hatchery on July 1, succeeding his father, W. G. Seaman, who retired on that date as fish rearing station superintendent after 28 years of caring for the Montebello trout. Promoted to the fish hatchery foreman job vacated by Loven Seaman was Ralph W. Cash, fish culturist with the commission since 1952.

DOG WARDENS NOW EMPLOYED BY 60 COUNTIES. On July 1, the counties of Floyd, Isle of Wight, Orange, Rappahannock, Russell and Stafford joined 54 other Virginia counties in enforcing their own dog laws, thereby permitting the game wardens in these counties to become full-time wildlife protectors.

STATE FISH BIOLOGIST GRADUATES FROM HATCHERY SCHOOL. Dixie L. Shumate, Jr., Virginia game commission fish biologist, has been awarded a certificate upon completion of the nine-month hatchery management course at the Courtland, N. Y. Training School of the U. S. Bureau of Sport Fisheries and Wildlife. Stationed at Marion, Shumate is now studying commission hatchery management to recommend ways to increase hatchery efficiency.

STATE GAME COMMISSION MET WEST OF BLUE RIDGE IN JULY. The Virginia Commission of Game and Inland Fisheries held its mid-summer public meeting on July 24 at the courthouse in Covington to give more sportsmen from the western part of the state an opportunity to discuss game and fish problems with the commission first hand. The Covington Chapter of the Izaak Walton League and the Alleghany Game and Fish Protective Association cooperated with the commission in publicizing this opportunity and in making arrangements for the hearing.

STATE FISH BIOLOGISTS BAG AND TAG 249 BASS. Virginia game commission fish biologist Jack Hoffman and his assistants Bradley Rowles and George Crenshaw, fishing on the South Fork of the Shenandoah River recently using artificial bait, caught 249 smallmouth bass in six days. All of these fish were tagged and released. The tagging operation is a part of the commission's research project on smallmouth bass. Just when and where the bass are retaken will show the fishing pressure on this stretch of river, which extends from Luray to Behler's Ford. A one-dollar reward will be sent to those fishermen who return the tags to the commission at Richmond.

SOIL CONSERVATION SOCIETY OF AMERICA CONVENES. The Soil Conservation Society of America will hold its 14th annual convention August 26-29 in Rapid City, South Dakota. Emphasis will be placed on soil and water conservation problems and practices of the nation and adjoining Canada. According to Alvin C. Watson, SCSA president, Upper Darby, Pennsylvania, a thousand registrants are expected for the Rapid City convention with the South Dakota SCSA Chapter serving as host.



Natural pools along Folling Water Creek are ideal trout habitat but in short supply.

A log for cover (left) and a gabion to dam up a pool (right) artificially create areas for natural trout reproduction.



The Italian gobion creates pools and

Stream Improvement

Commission Ph...

"Put and take" methods of trout management. The great expense of put-and-take stocking plus the natural conditions has led the Commission in a series of and of insuring better survival of stocked trout.

On Falling Water Creek in Bedford County, the Commission is creating better living conditions for fish. The use of gabions filled with stones and placed in a strategic spot in the stream at the sides of the stream. These pools provide the trout with

In some cases, the gabions are partly filled with aquatic insects upon which the trout feed.

Since this is a new experiment, the Commission hopes the experiment will be practical on a large scale. However, some improvement projects on small streams in their localities for "how to do it" information.

Closeup of a gabion: a wire mesh bag filled with rocks.





...cuts banks, creating trout cover.

ment For Trout

...os • Harrison

...an endless proposition and could go on forever.
...e desire to provide fishing under more attractive,
...re for ways of increasing native trout production

...e Commission is trying to improve the stream by
...e Italian "gabion," which consists of a wire bag
...H stream, has created pools under logs and roots
...at with much needed cover.

...nestone in order to provide breeding places for

...cannot tell yet whether this type of stream manage-
...men's groups who would like to carry out similar
...ies are urged to contact the game commission

Logs can be placed along stream for gabion to undercut.



Gabion (right) diverts water toward bank, undercutting rock to make trout cover.

This pool cut under a natural bank was created by a gabion. Sportsmen's groups can improve streams in this way.



A New Concept In Game Protection

By WILLIAM G. LORD

THE archer released the taut bowstring and sped the arrow thudding into its target. The deer dropped as if stoned, and the hunter ran forward strong with elation. But joy curdled into disappointment. The deer lay before him an obviously sick and wasted creature—no venison and hardly a trophy.

Even in its death throes, the animal gave clear evidence of lameness and exhaustion. The hind quarters appeared oddly swollen. The hunter poked with his bow. A slight crepitating sound issued from the sickly flesh, like that of crackling air bubbles. Apprehensively, the hunter gave the corpse to the forest and called it quits for the day.

The word passed among the hunting gentry. Nothing much to worry about, though. A fellow finds a dead or sickly deer every now and then. Sometimes, it seems, there is a widespread outbreak of disease. A lot of deer die. Apparently no one knows much about the cause. Just one of those things.

But deer are too valuable in terms of recreation and dollars to permit their fates to rest unaided. The game management profession has not been idle.

Prompted by several large scale deer disease outbreaks within the past decade, the Southeastern Association of Game and Fish Commissioners and the U. S. Forest Service jointly suggested a full time project concerned with the investigation of deer diseases.

The object fused into reality through the efforts of the participating southeastern states and the U. S. Fish and Wildlife Service. The organization, designated as the Southeastern Cooperative Deer Disease Study, was officially inaugurated on July 1, 1957. States cooperating in this program at present are Alabama, Arkansas, Georgia, Florida, Kentucky, Louisiana, Maryland, Mississippi, Tennessee, South Carolina and Virginia.

The C. D. D. S. has a dual purpose. Primarily it serves as a diagnostic facility for "die-offs" that occur in the deer herds of the participating states. It also functions as a research unit, affiliated with the University of Georgia's School of Veterinary Medicine in Athens, Georgia. Continuing studies are in progress on deer diseases with particular regard to their interrelationships with domestic animals or man. The laboratory is equipped with diagnostic apparatus necessary for the study of viruses, bacteria, fungi, parasites, poisons, and diseased tissues.

It is obvious that a broad authorship is involved in the genesis of such an organization. The ideas and efforts of many men conjoined to make the C. D. D. S. a reality. However, one individual deserves singular mention, Dr. Frank A. Hayes, Project Director of the C. D. D. S. and a faculty member of the University of Georgia's School of Veterinary Medicine.

When asked how the project evolved and became located on the University campus, he replies, "It came on the tail of a dart." This cryptic comment refers to his participation in the development of the now famous "Cap-Chur" gun, a many purpose weapon used primarily to fire a projectile-type-syringe into wild game. The syringe contains a temporarily immobilizing chemical, allowing the harmless "Cap-Chur" of the quarry.

The founding fathers of the deer disease project knew they needed a man with the habit of achievement. An infant's first years are its most precarious. Dr. Hayes possessed the desired traits of originality, administrative ability, and scholarly attainment. The C. D. D. S. became his "baby" and was, therefore, assured a substantial start in life.

The project is now a sturdy young organization. Dr. Hayes bestows a fond paternal eye, but, except for an occasional field trip, he places its destiny in the capable hand of Dr. William T. Gerard.

Recently, while Dr. Gerard was on call to Arkansas, Dr. Hayes answered a call from the Virginia Commission of Game and Inland Fisheries regarding a report of deer affected with blackleg. The region involved included some of the best hunting ground in eastern Virginia between the Potomac and the James.

Prior to the call for the C. D. D. S., Virginia Game Biologist Herman J. Tuttle had investigated an outbreak of blackleg among the cattle of a Charles City County farmer. The farmer believed that his stock acquired the disease from a deer found dead in his pasture. The abrupt death of several cattle prompted him to call the clinic of Drs. Loring and Finnegan in Williamsburg. Prompt diagnosis and herd vaccination halted the outbreak.

Upon arrival in Virginia, Dr. Hayes discussed the status of the disease with Doctors Loring and Finnegan and then visited the suspect area with Mr. Tuttle. He reviewed the situation with the cattleman and field-checked and burned remains of the dead stock and the deer. Bone specimens from each species were collected for laboratory examination wherein the diagnosis of blackleg was subsequently confirmed.

Dr. Hayes pointed out that annual herd vaccination is an essential step in the control of blackleg. Also known as black quarter, quarter ill, and symptomatic anthrax, the disease is an acute, crippling affliction of cattle, sheep, and deer characterized by a gaseous swelling beneath the skin of the shoulder and rump. The causative organism, *Clostridium chauvei*, is an anaerobic, spore-forming bacterium that resides naturally in the soil. It may be ingested when animals graze pasture too closely, as during periods of slow plant growth. It affects young, fast growing animals; those over two years of age apparently possess an immunity.

The germs, upon entry into the intestine, pass by way of the blood stream and localize in various tissues, par-

Mr. Lord was a senior student in the Department of Veterinary Pathology and Parasitology, School of Veterinary Medicine, University of Georgia, Athens, Georgia during this research work in 1958.



Virginia Game Biologist Herman J. Tuttle collects deer blood sample to be forwarded to the central laboratory. Blood will be tested for evidence of disease conditions.



Complete laboratory procedures are performed to insure an accurate diagnosis. Here, technician Emmett B. Shotts makes inoculations into embryonated eggs for the isolation of viruses.

ticularly the larger muscle groups. The disintegrating muscle assumes a dry, dark appearance, giving reason for the name of blackleg. Death frequently occurs within a day or two after the onset of symptoms. Fatalities may approach 100 percent.

Blackleg is similar to another highly fatal disease, malignant edema. This disease is caused by *Clostridium septicum*, which gains access to the body by way of a wound rather than by ingestion. Animals of all ages are affected.

From the evidence at hand, Dr. Hayes concluded that the preventative measure of herd vaccination against blackleg provided a safeguard for cattle, but an important, unresolved question remained regarding the deer. Hunters afield were the logical source for information.

At intervals throughout the morning the sharp reports of shotguns and rifles loudly announced the first day of the hunting season. Apparently the hunters were finding plenty of deer targets. But were the deer healthy and wary, or were some fatally diseased and on the verge of collapse?

"We're close by the field camp of the James River Rod and Gun Club," said Mr. Tuttle. "Let's hop in the car and meet with them when they come in for lunch."

It was high noon. In jeeps, pick-ups, and precariously lurching family cars, the hunters assembled for an informal discussion wherein Dr. Hayes described the purpose of his field study. He outlined the symptoms of blackleg. "Had anyone seen an obviously lame deer?"

"They're all too healthy and spry," came the general reply, "but we'll keep an eye peeled and let you know."

During the remainder of the day Mr. Tuttle and Dr. Hayes cruised the hunting grounds, interrogating hunters and inspecting slain deer. All specimens looked healthy and no reports of crippled animals were received.

The Virginia Commission of Game and Inland Fisheries had received three reports of blackleg in deer prior to the call to the C. D. D. S. Apparently no new cases had developed, largely due to the prompt vaccination program in the affected area.

This fact dramatically expressed the means of controlling blackleg. Cattle, especially the young animals, should

be vaccinated yearly. The financial loss resulting from the death of an animal killed by blackleg would probably exceed the vaccination cost for an entire county.

The obvious means of effecting this action was through the County Agent for Charles City and James City Counties. Accordingly, Dr. Hayes and Mr. Tuttle visited the office of County Agent V. B. Perry.

This capable gentleman agreed with the wisdom of annual herd vaccination. "In fact, I've already begun to contact some of the herd owners to point this out to them. We get a scare like this once every few years and start vaccinating. Then, no blackleg shows up for several years and a fellow kind of thinks he can get by. It takes the loss of a few head to prove the point."

Annual vaccination of cattle against blackleg is an economically sound practice for the livestock farmer. It will also aid in preventing outbreaks in deer and thereby protect the health and vigor of the deer herd.

Every possible safeguard is necessary for the populous deer herd of eastern Virginia. For several seasons Mr. Tuttle has been campaigning for hunter acceptance of a doe season. Strictly controlled, the measure will greatly facilitate containing the population within the carrying capacity of the range. The unfortunate sequel to overpopulation is stunted deer, with frequent "die-offs" from disease and malnutrition.

Are the hunters "buying" Mr. Tuttle's suggestion? "I think so," he says. "Some are still reluctant, and most hunters prefer a buck. But more and more agree that the does need to be harvested."

Following the field investigation, Dr. Hayes and Mr. Tuttle drove to Richmond for a review of the trip with Chester F. Phelps, Executive Director of the Virginia Commission of Game and Inland Fisheries.

At the conclusion of the congenial and informative discussion, Mr. Phelps remarked, "Dr. Hayes, it gives us a feeling of comfort to know we have men like you to call upon."

And, it might be added, it is the hope and desire of the C. D. D. S. to sustain a "feeling of comfort" for the game management profession of the Southeast.



Commission Photo by Kesteloo

Meet the world's best mouse trap—the monkey faced barn owl! One barn owl can kill 4,000 rats and mice a year.

The Silent Mouse Trap

By GEORGE H. HARRISON

Education Division

“CHICKEN KILLER” is the name most commonly given to hawks and owls. “Mouse trap” would be more accurate.

Tyto alba partincola, better known as the monkey-faced barn owl, is the best mouse trap of all. Yet, most farmers, through misinformation, will shoot one every chance they get.

Although probably not worth his weight in gold, the money, measured in good American silver dollars, that a barn owl saves the farmer or a community each year would certainly more than counterbalance this tireless bundle of flesh, bones, and feathers, especially since a barn owl will weigh less than one and a half pounds soaking wet.

Scientists have discovered that the barn owl is capable of killing as many as 4,000 rats and mice during a single year.

One observer found that a pair of barn owls while feeding their young in a nest will capture at least 40 mice or other small rodents each night. A single wild barn owl under observation for a period of 90 days consumed 837 animals and captured 360 more which he did not eat.

Another observer has seen a barn owl bring 16 mice, three gophers, a rat and a squirrel to its ravenous nestlings during a single 25-minute period.

As an experiment, a half-grown barn owl was given all the mice it would eat. It swallowed eight, one after another, and the ninth followed—all but its tail. Within three hours, the tail had disappeared and the owl was ready for a second meal which consisted of four more mice.

Records show that one owl will catch as many rats and mice in a year's time as eight to twelve average cats. A government report tells of an instance where cats were placed in a rat-infested storage cellar of a brewery. When the doors were opened in the morning, the cats rushed out, showing every indication of fear, and fought against their being taken back. An owl was placed into the same cellar and the next morning nine headless rats were found. Each morning for three weeks, dead rats, partially devoured, were located in the cellar until finally the rodents became so scarce that the owl had to be fed raw meat to prevent starvation.

The barn owl swallows his prey whole, fur and all. The owl's stomach separates the digestable parts from the fur and bones. This waste material is then rolled in a neat little ball and coughed up. The dried fur and bones is called “pellet”. By examining the pellets found in and around the nesting or roosting sight, one can tell exactly what the owl has been eating.

The examination of a set of 91 pellets at the University of Michigan produced 195 animals of which 160 were meadow mice, eight deer and field mice, 10 short-tailed shrews, seven meadow jumping mice, one unidentified mouse and nine song birds.

A collection of pellets from Pennsylvania contained 817 meadow mice, 210 house mice, 103 deer mice, 103 jumping mice, nine other mice, 243 shrews, 31 barn rats, 31 moles, 12 young cottontail rabbits, 12 starlings, one chickadee and one young opossum.

Another collection of 2,094 pellets from several eastern states yielded the bones and fur of 4,565 mice, rats, shrews, and moles. A few small song birds, mostly starlings and

house sparrows, 15 immature cottontail rabbits, and a few miscellaneous items completed the list.

No barn owls have ever been recorded to have killed a chicken to the author's knowledge. Most certainly if the owl ever did kill a chicken, it was the very rare exception.

What makes this monkey-faced creature a deadly mouse trap? What secret weapon enables him to out-catch any cat, trap or poison? How can he swoop through the night and snatch an unknowing mouse in the protective cover of the woods?

Two things make *Tyto* the greatest living mouse trap . . . hearing and silence!

The barn owl possesses a hunting mechanism unknown to any other carnivorous bird. This mechanism enables him to locate his prey by hearing alone and to make accurate, flying attacks even in absolute darkness. This fact has been studied and proven. At last year's convention of the American Ornithologists' Union, Roger Payne and William H. Drury, Jr., reported that they had achieved unnatural darkness in a sealed room and that a barn owl, even under these exaggerated conditions, was successful in catching living prey.

Tyto has a skin-flap, much like our ear lobes, which enables him to pick up sounds that other birds would miss. He is also very sensitive to high pitched sounds beyond the ability of the human ear.

His second weapon is silence in flight made possible by his very soft plumage and the furry edges on his flight feathers. These specialized feathers almost eliminate sound completely.

As mentioned before, most farmers will shoot an owl on sight, but all farmers are not that mistaken. Bill and Dana Rowan of Butler County, Pennsylvania, know better than to shoot a barn owl because they have studied the big monkey-faces.

Each year since 1944, the Rowans have had a family of barn owls nesting in the top of their 50-foot silo.

Although their neighbors never said much, they still didn't like the idea of Bill Rowan keeping chicken killers in his silo year after year. But Bill knew better. The family of owls was safe on his farm.

My father, Hal H. Harrison, received a call from Bill in the early spring of 1949. Mr. Rowan said that he thought that the barn owls were nesting in his silo again this year. Dad and I drove to the farm, climbed the silo and found five grey-white eggs laying on a litter of pellets.

We checked the nest each day until the first egg began to hatch. Photographs were taken of the hatching process. Finally the little owl won the fight with the egg shell and tumbled out, exhausted but victorious.

The female lays an egg every two or three days and starts incubating soon after she lays the first egg. As a result, the first egg hatches a week or ten days before the last. Four of the five eggs hatched; the fifth evidently was infertile.

Photographs were taken as the young grew. At first, there was a marked difference in the size of the oldest compared to that of the youngest. However, as they grew the difference was not as noticeable.

When the youngsters were four weeks old, we brought them down to the ground in order to let Mrs. Rowan photograph them. This developed into quite a project because a basket and ropes were needed to lower the family without risk of dropping them. This involved more work than anyone dreamed.

One morning, a short time later, Bill found one of the young in the bottom of the silo. It only had an injured leg and Dana treated and bandaged it. The owl recovered.

When the owls were about seven weeks old, we decided to try to get pictures of the adult owls bringing in food. This had to be done at night since they are nocturnal hunters.

The camera was placed on the platform at the top of the silo. It was focused on the entrance where we had watched the adults fly in and out during the early stages of the study. An electric wire was dropped to the ground and connected to a battery where we controlled the camera.

It was dark several hours before we caught the dim outline of the old owl sailing into the silo. Dad pushed the button just as the owl lit on the silo door. Flash! We had it!

Two nights were spent in this fashion. Three pictures were taken on the first night and each showed a meadow mouse (*Microtus pennsylvanicus*) in the owls' claws. The second night produced five pictures showing a meadow mouse, but in its beak this night.

Sounds from the feasting youngsters were evident, even from the ground, throughout both nights.

In spite of their neighbor troubles, the owls have been very successful in raising four or five youngsters in the silo each year. And for three months each summer, the young owls actually scream for mice, moles and shrews.

One year the Rowans got interested in the pellets and started collecting them. For two months they gathered all the pellets burped up by the young and adults in and around the silo. They accumulated 203 pellets and a bag of smashed ones. They sent the pellets to J. Kenneth Doult, Curator of Mammalogy at Carnegie Museum in Pittsburgh. Doult examined every pellet with a microscope and gave the Rowans this list of what their owls had eaten:

429 meadow mice	5 small song birds
4 lemming mice	1 insect
1 pine mouse	
12 white-footed deer mice	
18 jumping mice	
21 star-nose moles	
1 hair-tailed mole	
95 large short-tailed shrews	
1 least short-tailed shrew	
1 squirrel	
5 cottontail rabbits	
23 unidentified mice	
611 mammals	

There wasn't a bone or feather of a chicken in all those pellets, even with four ravenous youngsters to feed.

No wonder the Rowans say they have the world's best mouse trap on their farm. The pile of steel spring mouse traps have long since rusted at the Rowan farm.

Eastern Shore Tackle-Buster--the

TARPON

By CLAUDE ROGERS, *Director*
Virginia Salt Water Fishing Tournament

BACK in 1884, a huge silver fish exploded from the waters of Florida's Indian River Inlet, shaking its head vigorously to rid itself from the shiny contraption caught fast in its jaw, while some distance away and at the other end of the line a shaking angler was making piscatorial history. This event heralded the birth of big game fishing along the Atlantic coast, but the frightened angler was too busy to think of this or anything else at the time. Within a few years special trains—"silver king specials"—were taking anglers to their favorite rivers and passes on the west coast of Florida.

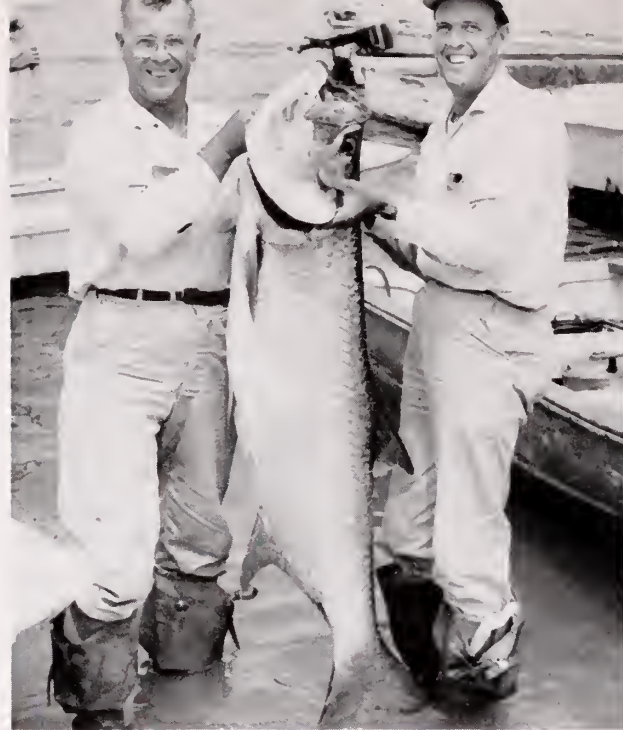
It is unlikely that we will ever see "tarpon specials" in Virginia, but to those few anglers who have witnessed a tarpon's tackle-busting acrobatics in the broad shallow bays of Virginia's Eastern Shore, nothing is too "special" for a tarpon.

Although the tarpon, or silver herring as it is called by the local commercial fishermen, is a native of Florida and other southern waters, it has been taken in nets as far north as Nova Scotia. Along Virginia shores tarpon are taken in fish-pounds as early as mid-May and as late as October.

To date seven tarpon have been taken by sport fishermen from Virginia waters, ranging in weight from 35 pounds to 90 pounds. One was boated off Grand View Beach, one from Magothy Bay, one from South Bay and four from Gull Marsh Channel. The last three locations are all at Eastern Shore. Although tarpon have been sighted by commercial and sport fishermen in many of Virginia's bays and rivers, there are three areas where there are known concentrations, especially during the period from July 15 to August 15. They are: around No. 1 channel buoy in Magothy Bay; in Big Ebb Drain of South Bay; and Gull Marsh Channel of Outlet Bay.

The tarpon is a "throwback" to the Cretaceous period, and is equipped with a large lung-like air bladder. It is the filling of this unusual organ with air which accounts for the tarpon's frequent surfacing or "rolling" action. Experienced tarpon fishermen do not waste much time in one spot if no "rolling" fish are spotted or if there is no unusual water agitation.

Tarpon are all alike in two respects regardless of where they are found. A tough bony mouth makes him very difficult to hook and his brute power and high jumping acrobatics make him even more difficult to land. This is the reason why veteran tarpon fishermen say, "We jumped a certain number of tarpon today;" not, "We caught so many tarpon today." It is not unusual to have as many as



A worthy adversary—on 87-pound tarpon! This one was taken by Fred Edwards (left) and Claude Rogers (right) in Gull Marsh Channel.

10 strikes without landing a fish. This does not mean that some fortunate angler will not take a tarpon on his first trip. This happened on two occasions last year in early August when Bill Draper of Hopewell took a 64-pounder and George Killmon of Wachapreague boated a 53-pounder on their first visit to the tarpon grounds of Gull Marsh Channel.

Tarpon in the 100-pound class are taken regularly in Florida on bait-casting and fly casting tackle. This unquestionably requires a certain amount of skill but if the tarpon elects to run, instead of jump, very few would be landed on light tackle. Indeed, the tarpon's fighting spirit contributes to its own demise, for it is such a great game fish that it will literally jump itself to death. The exhausting tailwalking antics and the proximity of the angler to the fish, are truly two of the great thrills of tarpon fishing. This ringside seat, so to speak, is seldom afforded by any of the other great jumpers of the sea. It is not without reason that the tarpon is referred to as the "silver king."

The depth of water undoubtedly has a great bearing on the tarpon's fight. It is the consensus of fishermen that a tarpon hooked in deep water is more inclined to run and does not fight as spectacularly as those taken in a few feet of water. From my limited observations I am inclined to agree with this. I once hooked a tarpon in Gull Marsh Channel that stripped off 645 feet of line before he made his first jump. How did I know he ran off this much line? Because he emptied the spool just about the same time he threw the bait and when I returned home I stretched the line along the highway and measured it. The tarpon emptied the reel so rapidly on this occasion that Wade Morse of Virginia Beach, who was fishing with me at the time, did not have time to reel in his line, throw over the anchor buoy or start up the outboard so that we might follow the fish.

At the present time those few anglers who are trying for tarpon at Eastern Shore fish the last three hours of ebb tide when tarpon are dropping back off the flats where



Fishermen on the tarpon grounds at Gull Marsh Channel are shown catching live bait on the ebb tide.



Salt Water Sport Fishing Association of Virginia Photos

This closeup shows how a live mullet is rigged for tarpon fishing. Live croakers are also used.

they have been feeding to the deeper sloughs and channels. The tarpon are more concentrated at this time but they are also in water from 10 to 20 feet deep.

Deep water does not rule out the possibility of taking tarpon in Virginia on light tackle. Back in July 1954 it was a bait casting rod and an artificial lure that coaxed the first strike from a tarpon in Virginia waters. I was fishing with Fred Edwards of Virginia Beach and Roland Halstead of Creeds at the time. We had trolled and cast all morning in the South Bay area of Virginia's Eastern Shore with all the so-called Florida tarpon lures without a strike although the bay was glassy slick and we could see tarpon "rolling" in every direction. Finally, determined to make the next rolling tarpon see what a lure looked like even if he didn't want it, I laid down the heavy tackle and picked up a light bait casting rod that I used for salt water trout fishing. Shortly thereafter two tarpon "rolled" simultaneously about 30 feet from the bow of the boat. I dropped the little clothespin type lure directly in front of them; there was a sharp tug and I reeled in a slack line—the tarpon had cut the 12 pound monofilament leader. It took the three of us quite awhile to recover from the surprise but here was our answer: they would strike, if the lure was presented properly. Fred Edwards had his bait casting rod and reel out and ready to do battle in short order and the next tarpon that "rolled" close to the boat had the opportunity to look at two baits instead of one. He selected Fred's lure and proceeding off on an underwater course that did not stop and Fred's 12 pound test line parted after the first 75 yards. That day, I had one more strike from a rolling fish that threw the plug on the first jump. Now, when I cast to rolling tarpon with bait casting tackle, I use a four-foot leader of 40-pound test monofilament and I am still hopeful of landing a tarpon on light tackle.

Although I would like to land a tarpon on light tackle, I am proud to take him any way I can get him short of a net, and I believe that you will find the tarpon a worthy adversary on the conventional boat or surf rod equipped

with a 200-yard reel and loaded to capacity with 36-pound test line. I am speaking of equipment for fishing the deeper sloughs and channels of the Eastern Shore area where you could expect the fish to run further and fight longer than if hooked in shallow water.

Hooks and size are a matter of taste. I prefer a short-shanked hook of double strength with a slight offset to the point. The size of the hook is sometimes determined by the size of the bait you plan to use. In the event of a strike the hook should be examined and re-pointed if necessary.

Although cut bait, strip squid and a variety of small whole fish have produced strikes, I prefer a live fish hooked through the upper jaw, just in back of the lip. Live bait is difficult to obtain on the tarpon grounds and I always try to pick up a few small fish from one of the good bottom fishing spots along the route. Most of the tarpon fishing is done from small boats which unfortunately do not have live-wells and a lard-tin, while only a makeshift arrangement, will keep the bait alive if the water is changed frequently.

Anglers fishing from anchored boats have accounted for every tarpon taken to date, with the angler letting the tide float the bait out 100-150 feet. A 60-pound monofilament leader about eight feet long to which the baited hook is attached is suspended from the float. I prefer to use hooks snelled with monofilament for most of my fishing and especially while fishing for tarpon in the Eastern Shore area. The ever-present shark is always a problem and a big one on wire leader can waste too much valuable fishing time. Tarpon have been hooked in this area on bottom rigs but the marine growth that fouls your line and the sharks and rays which steal the bait make bottom fishing more of a problem than pleasure.

Trolling has not been effective and you can make yourself mighty unpopular with the anchored fishermen. This is one fish that is definitely frightened by an outboard motor, especially while in shallow water.

One word of caution to the prospective tarpon fishermen: in most of the Eastern Shore area, on the sea-side, the tide

rise and fall is five feet. Most of the "oyster rock" (shell piles) are covered at high water and lie just under the surface at low tide. It is very dangerous to operate a boat in this area unless you are completely familiar with the

location of these "oyster rocks." Anyone wishing to try the Eastern Shore area for tarpon should obtain the services of a local guide or follow someone to the fishing grounds that is familiar with the area.

* * *

Leading Entries in the 1959 Virginia Salt Water Fishing Tournament

<i>Species</i>	<i>Weight</i>	<i>Angler</i>	<i>Address</i>
WHITE MARLIN	69 lbs. 12 oz.	R. Suppiger	Glen Ellyn, Ill.
BLACK DRUM	80 lbs.	M. B. Ewell	Bloxom, Va.
COBIA	56 lbs.	F. T. Haines	Silver Spring, Md.
CHANNEL BASS	63 lbs. 3 oz.	M. A. Daniels	Cape Charles, Va.
STRIPED BASS	38 lbs.	H. S. Jones	Cape Charles, Va.
BLUEFISH	14 lbs. 8 oz.	C. M. Campbell	Rockville, Md.
FLOUNDER	10 lbs.	Mike Comer	Norfolk, Va.
TAUTOG	9 lbs. 12 oz.	Steve Struck	Bloomfield, N. J.
SEA BASS	5 lbs. 9 oz.	Clifford C. Hayter	Norfolk, Va.
GRAY TROUT	5 lbs. 15 oz.	W. R. Grinalds	Onley, Va.
CROAKER	3 lbs. 8 oz.	Clinton O. Carlin	Warsaw, Va.

Bird of the Month:

Wood Thrush

THE wood thrush has as its high claim to distinction its voice. It belongs to a family of famous singers, the only exception being our familiar robin. It must be confessed that the robin's song is a rather monotonous warble, the chief appeal of which is that it is one of the first notes in the spring chorus. The bluebird too has but a slight note, though it is a sweet and cheery one. The performances of all the other thrushes are notable indeed.

There has been much argument as to which of the thrushes is the finest singer, an argument which because of the personal preferences involved will never be settled. The more northern members of the family, hermit and olive-backed and gray-checked thrushes, migrants with us, are all brilliant vocalists. The veery, or Wilson's thrush, which in Virginia in its singing season only occurs on our highest mountains, has an ethereal quality in its notes. It is like some fairy of the hilltops whose voice when he hears it stirs the exiled mountaineer once again. But there are many of us who must still give first place to our homely wood thrush, familiar friend on any Virginia farm. The one word its song always brings to mind is 'purity.' Out of the dawn chorus its flute obligato sounds forth like some disembodied hymn of praise to the Creator; and again, late into the twilight, when other birds are stilled, its moving notes are still quietly sounding.

Three of the thrush family are familiar to all Virginians: the robin, the bluebird, and the wood thrush. Many people do not even realize that the two first are thrushes. There is nothing in the coloring of the adult birds to indicate it. They have departed from the standard thrush costume of olive-brown back and spotted breast, although the close relationship still shows up in the spotted breasts of young robins and bluebirds. To those who look closely, however, there is a clear similarity in habits and movements.

Most of the thrushes are birds of the deep woods. The veery, for example, seeks the big trees on the distant



mountain tops. The wood thrush is a bird of the forests too, but it is also a friendly bird and readily comes to our yards. It is the most beautiful member of the thrush family with its cinnamon-colored back, the shade growing richer toward the neck and head, and its pure white underparts on which the black spots are both larger and more widespread than in other thrushes. As the bird runs furtively along the edge of a thicket or under the low hanging branches of a tree, seeking as all thrushes do the twilight shade, these black spots stand out sharply on the immaculate breast.

The nest is like a robin's, somewhat smaller and with a thinner cup of mud as its inner binder but fashioned in the same way of leaves and roots and grasses. The eggs, similar to the robin's eggs, are of a lovely shade of greenish-blue. Usually four are laid, sometimes only three, and less frequently as many as five. Two broods are often reared, the first eggs being laid around the first of May, and the second brood sometimes not leaving the nest until late July.

—DR. J. J. MURRAY



Game Wardens Attend District Training Sessions

All 138 of the state's game wardens were brought up to date on game commission plans and activities by commission executive director Chester Phelps and had opportunity to discuss game law interpretations and law enforcement procedures at district training sessions held during the month of June.

Hampton Roads District Supervisor R. O. Halstead's 26 wardens met in Richmond June 22-23 to complete the



Commission personnel in attendance at the Daniel Boone District warden meeting in Marion included (front row, left to right) Supervisor Bird, Circulation-Distribution Chief Blankenship, Executive Director Phelps and Law Enforcement Chief Midyette.

last of the two-day sessions. J. E. B. Stuart District Supervisor J. W. Francis' 20 men met in Roanoke on June 15-16 and the 20 Daniel Boone District wardens met with their supervisor, Ben L. Bird, in Marion on June 17-18. Both the George Washington District meeting June 1-2, with Supervisor R. S. Purks' 23 men, and the Patrick Henry District meeting June 8-9, with Supervisor I. H. Vassar's 29 men, were held in Richmond. Harrisonburg was the location of the June 10-11 meeting of Supervisor C. L. Miller's 23 Thomas Jefferson District wardens.

Game Commission Education Chief Receives PH.D. Degree

Joseph J. Shomon, chief of the Virginia game commission's education di-

vision and editor of VIRGINIA WILDLIFE magazine since 1947, received his Ph.D. degree in natural resources conservation at the University of Michigan in Ann Arbor June 13. A native of Westford, Connecticut, Dr. Shomon also holds B.S. and M.S. degrees in forestry and wildlife management from the University of Michigan.

A leave of absence from the commission from September 1956 until August 1957 permitted the division chief to complete academic work and travel 33,000 miles studying information and education practices in conservation agencies throughout North America. His thesis, entitled "Effective Conservation Communications," concludes that (1) failure to recognize vital conservation issues and failure to resolve them can lead America to disaster, and (2) public awareness in a democracy is the most important single factor in the resolution of our natural resources issues and problems.

Florio To Head Waterfowl Council's I and E Group

Anthony J. Florio of the Delaware Game and Fish Commission was recently named chairman of the Atlantic Waterfowl Council's Information and Education Committee, taking the place of Philip Barske, Wildlife Management Institute representative at Stratford, Connecticut, who had asked to be replaced, according to a communication from Clyde P. Patton, chairman of the council.

Boys Learn To Cast

Members of the Suffolk-Nansemond Chapter of the Izaak Walton League, during April and May, taught the skill of bait casting to 40 boys, ages 10 to 14, at nearby Lake Cahoon.

Ten adult instructors, headed by Mr. Joe E. Haslett of Suffolk, handled the job of coaching the youngsters. Under the watchful eyes of these "old-timers"

at the game, the boys learned the finer points of fishing by casting practice plugs at (and sometimes into) 30-inch rings located from 40 to 80 feet from shore. At the end of the course, backlashes were becoming fewer and many of the youthful anglers were dropping plugs into the rings with an amazing degree of accuracy.

The final contest, held on May 24, saw the two winners in each of the five age groups receive a casting rod and reel. The prizes, valued at \$20



At the close of the 12th Annual Wildlife Essay Contest, Lunenburg County Warden J. R. Bacon, Jr. (right) was able to present contest award certificates to nine Kenbridge High School students (from left): Jane Cary, Nancy Faye Wilkinson, Lynn Hadden, Phyllis Thompson, Jonnie Hite, Clare Gorden, Edna Locket Showalter, Mary Jane Blackburn and Ann Yount.

to \$25 each, were donated by local merchants and IWL members.

Brochure Provides Facts on Fisheries Profession

The first publication specifically covering employment in the fisheries field is "Fisheries as a Profession," now available from the American Fisheries Society, P. O. Box 429, McLean, Virginia, the Wildlife Management Institute reports. No charge is made for 10 or less copies.

The illustrated brochure touches on the importance of fisheries, personnel and employment, education, salaries and benefits, sources of employment, and suggestions for obtaining detailed information on the fisheries field.



Greene Named To Forest Service Post

A. F. C. (Pete) Greene, until recently director of the Wyoming Game and Fish department at Cheyenne, has been appointed fisheries management biologist for the Rocky Mountain region of the Forest Service, U. S. Department of Agriculture.

He is headquartered at the regional office of the Forest Service in Denver and works in Colorado, Wyoming, South Dakota, Nebraska and Kansas all of which are included within the region.

Stites Is Elected To Head A.A.C.I.

Members of the American Association for Conservation Information, meeting at Marshalls Creek, Pa. recently, elected Wilbur D. Stites of the Wisconsin Conservation Department to the position of president. Stites, who formerly served as first vice-president and secretary-treasurer, succeeds Jack Dyer, of the Arkansas Game and Fish Commission.

Other newly-elected officers of the A.A.C.I. are: Con D. Tolman, Colorado Game and Fish Commission, first vice-president; Robert D. Calkins, California Department of Fish and Game, second vice-president; James Keefe, Missouri Conservation Commission, secretary-treasurer; and Will Johns, Pennsylvania Game Commission, editor.

The A.A.C.I. went on record as recommending expanded information-education programs for certain agencies within the U. S. Departments of Interior, Health, Education and Welfare and Agriculture; endorsed the broad principles of the Junior Chamber of Commerce conservation program; and agreed to join the International Association of Game, Fish and Conservation Commissioners in attempting to devise an appropriate wildlife conservation symbol.

Four members of the Virginia game commission's education division attended the meeting: Division Chief J. J. Shomon, who spoke during a panel discussion on Information and Education Development and Implementation; Circulation and Distribution Chief Florence Blankenship; Audio-Visual Chief Leon Kesteloo; and Wildlife Education Specialist George Harvey.

Illinois Association Sets Shooting Preserve Standards

In a unique move to establish high uniform quality among shooting preserves, the Illinois Shooting Preserve

The standards provide that pen-reared mallards be similar in weight and plumage to wild ducks, and that all mallards be capable of strong flight between the release site and the resting pond. Illinois shooting preserve operators are also urged to provide well-trained dogs for the enjoyment of guests and the reduction of crippling losses of game birds.

The new code stresses gun safety and also states that preserve operators "should give the Illinois Conservation Department full cooperation in reports, law enforcement, and other administrative aspects of the industry."

Forest Fires Under 100,000 Mark

The total number of forest fires was under the 100,000 mark for the second year in a row in 1958 with 97,910 fires reported, the U. S. Department of Agriculture has announced.

"We can thank the American people for this second best year on record," said Richard E. McArdle, Chief of the Department's Forest Service. "Although it doesn't quite equal the 1957 all-time low of 83,392 fires, the area burned was the lowest ever—3,280,000 acres.

"People have become increasingly conscious of forest fire prevention. We believe the Smokey Bear Campaign sponsored by The Advertising Council for the State Foresters and the Forest Service, and the Keep America Green programs of the States and forest industries have contributed much to this awareness."

The 1958 record adds up to 268 fires a day, or one every 5½ minutes. Virginia's record: 1,077 fires in 1957; 1,198 fires in 1958.

Careless Drivers . . . Empty Game Bags

Everyone knows that the automobile plays an important, even if indirect, part in harvesting the annual wildlife



Association has set basic standards for all association members to follow, the Wildlife Management Institute reports.

The new standards are aimed primarily at the operators who are unaware of the basic requirements for quality hunting on preserves.

Under these standards only full-plumaged birds more than 14 weeks old will be released for hunting, and these should be capable of sustained flight similar to that of wild birds. The new code states that shooting courses, "should be areas with natural food and cover that closely duplicate the wild habitat of the upland game bird being released."

crop each year by transporting sportsmen to and from the hunting fields. But few people realize the devastating toll of game and wildlife which the automobile takes on our highways each year.

This is the observation of John D. Mitchell, manager of the commercial sales division of Remington Arms Company, Inc., who has lent special emphasis to this problem in a recent news bulletin from the company. He says:

"Game killed on the highways by automobiles is almost always a total loss, a loss that mounts in importance because most of these deaths occur during the breeding and rearing seasons. While no accurate figures are available, it would be no exaggeration to say the total for the entire country runs into staggering numbers."

Mitchell cites statistics released several years ago by the Kentucky State Division of Game and Fish which showed that 13,269 edible game birds and animals were killed on Kentucky's highways during two-thirds of that particular year, not including loss of foxes, skunk, mink, or song birds.

"If Kentucky's conservative figures were to be used as a measuring stick for the whole country and thus multiplied by 48," Mitchell says, "the loss in edible game to highway deaths would be well over 600,000 game birds and/or animals for the period."

"It would be again conservative to estimate this meat loss at 1,200,000 pounds, or two pounds to the bird or animal. Placing a value of \$2 per pound on it would bring this monetary figure close to \$2,500,000. Personally, I believe doubling these figures down the line would give a more accurate picture."

Mitchell states that in this analysis, no consideration had been given to the hunter's loss of a clean, healthful sport or to the valuable breeding stock lost to wildlife resources.

"The considerate motorist will do well to scan these figures with a thoughtful eye," he says. "If they cause him to slow down the next time he sees game in the road ahead, he will be making a contribution to his own pleasure, the pleasure of sportsmen and conservationists, and to the nation's economy."

Scientists Mark the Shad Run

Paul Nichols and Mayo Judy of the U. S. Fish and Wildlife Service, Moorehead City, North Carolina, have arrived at the Virginia Fisheries Laboratory, Gloucester Point, to begin a cooperative study with Virginia scientists on the shad run in the York River.

"We want to follow changes in the fisheries," Nichols explained. "Probably four times as many drift netters are operating in the river now as there



were in 1952 when the last survey was made. Besides that, we would like to check the importance of shad as a sport fish," he said.

Scientists have developed improved tags in the last few years which will be employed for tagging shad this spring. Instead of the metal pin used to hold two discs against the back of the fish, streamer type tags will be



On May 9, Game Warden E. W. Wilson checked out this bear in Tazewell County, where it was known to have been killing sheep.

used. A reward of \$.50 will be paid for each tag returned to either the Virginia Fisheries Laboratory or the U. S. Fish and Wildlife Service Laboratory, Beaufort, North Carolina.

In past years Nichols has studied shad runs from the Hudson River, New York, to the St. John's River, Florida. "It is interesting to note,"

he says, "that shad entering rivers in Florida and all the way up to the Neuse River in North Carolina die after spawning. Further up the coast a larger percent of spawned shad return to the ocean. In Chesapeake Bay, for instance, around 15 to 20 per cent of those reaching the ocean after having spawned return the following year. In Connecticut rivers and in the Hudson between 35 and 50 per cent return and appear in the fishery the following year. This accounts, in part, for the larger fish usually caught in northern waters. Six- and seven-pound shad are not uncommon in Connecticut."

A.O.U. Meeting At Regina

This month ornithologists and naturalists from all over North America will gather at Regina, Saskatchewan, for a week of concentrated discussion of birds and bird watching, during the 77th Annual Meeting of the American Ornithologists' Union which is to be held at the Saskatchewan Museum of Natural History.

The American Ornithologists' Union (A.O.U.) is the largest organization of its kind on this continent. It is composed of about 3,000 amateur and professional ornithologists, mostly in the United States and Canada. It publishes *The Auk*, a quarterly journal devoted to all aspects of the study of birds. Annual meetings are held at different cities in Canada and the United States. The Regina meeting will be the first time the A.O.U. has ever met in Canada west of Toronto.

The 1959 meeting is being held at Regina at the invitation of the Regina Natural History Society, the Saskatchewan Natural History Society, Regina College, and the Saskatchewan Museum of Natural History.

Gordon Receives Walton League Founders Award

Seth Gordon, one of the nation's foremost authorities on wildlife and related natural resources, was presented with the Founders Award of the Izaak Walton League of America at its recent convention. The League's highest conservation award went to the former director of the California Department of Fish and Game for "dedicated service to natural resource conservation in an unparalleled career covering 45 years of public service," according to the Wildlife Management Institute.

Wildlife Questions and Answers

Edited by Stuart P. Davey

Ques.: I bought a fishing license last spring. Do I have to buy another license this summer?

Ans.: Yes, both fishing and hunting license expire on June 30 every year. New licenses were necessary beginning July 1.

Ques.: I have read in the paper that more lands are now open to public fishing and hunting. Is this correct?

Ans.: Yes, the game commission has been able to acquire more public hunting and fishing lands through purchase, lease and cooperative agreements. More information is available from the commission (Box 1642, Richmond) as to where these areas are and when they are open.

Ques.: Do deer grow a new set of antlers each year?

Ans.: Buck deer grow their first antlers when about one year old and shed them about January. The next year they grow another set.

Ques.: Is there any contest in the state where deer antlers are judged and prizes given?

Ans.: Many local contests are held by sporting goods stores. The annual contest sponsored by sportsmen in the eastern and western sections of the state is held in late October. Watch VIRGINIA WILDLIFE for an announcement.

Ques.: You often make mention of native trout. What do you mean?

Ans.: By native trout, it is meant those trout that are reproduced in the wild—not stocked, in other words. Both rainbow and brook trout reproduce in some Virginia streams.

Ques.: I can't find out the waterfowl regulations. Why?

Ans.: Migratory bird regulations are set by the U. S. Fish and Wildlife Service after a complete review of the summer production of ducks and geese. It is usually late August or September before these seasons are announced.

Ques.: I have a private lake. Can you send me some fish to restock it?

Ans.: The commission can stock only those waters open to the public. No charges can be made for fishing these waters but a concession may be established and/or boats rented.

Ques.: Are there any elk in Virginia?

Ans.: There are two small herd of elk in Virginia. One range is between Bedford and Botetourt Counties; the other is between Giles and Bland Counties.

Ques.: We found a rattlesnake with 12 rattles and a button. How old would it be?

Ans.: Rattlesnakes shed their skins several times each summer and each time another rattle is formed so age is difficult to determine.



Ques.: My flowers and bulbs are being eaten by a small animal with stripes on its back. What is it and how can I stop the damage?

Ans.: Your flowers and bulbs are probably being damaged by chipmunks. Try catching them with rat traps baited with oatmeal (dry) and peanut butter mixture.

Ques.: We have a bird in our back yard that is pale blue on the sides and seems to have a white wing bar. What is it?

Ans.: It is very difficult to identify birds at long distances. Your local library should be visited for a bird identification book or you can send for a copy of the commission's *Birdlife of Virginia*, which costs 25 cents.

Ques.: How are freshwater fishing regulations set?

Ans.: Fishing is regulated by legislative acts of the General Assembly and regu-

lations as proposed and adopted by the game commission. The October commission meeting is the one at which proposals for changes in fishing regulations are heard. The commission then decides what, if any, changes are needed and advertises these proposals. They are then adopted or rejected at a public hearing held about 30 days after the October meeting. (Hunting regulations are handled in a similar manner with the initial proposal meeting being held in March.)

Ques.: Do I need a license to fish for salt-water species?

Ans.: No license is needed in salt-water areas.

Ques.: We are coming to Virginia in September and want to try our fishing luck in your fresh waters. Where can we buy licenses and what do they cost?

Ans.: Licenses can be purchased from clerks of circuit courts of the counties or the corporation courts of the cities and many other authorized agents (such as sporting goods dealers.) License fees are \$10 for a regular non-resident and \$5 additional for fishing in stocked trout waters, or \$1.50 for a three consecutive day permit to fish in all but stocked trout waters.

Ques.: Our club voted to buy rabbits and quail to restock our land this fall. Where can we buy these and how many should we put on 200 acres of woodland?

Ans.: It is difficult to give game management advice unless the land is seen; however, experience has shown that stocking of small game is unsatisfactory unless it is placed "before the gun." Your club's efforts could be best placed in creating more food and cover plantings on your property. If food and cover is present, the game will be there. Have your local warden visit the area. He can advise you further.

Ques.: When will the dove season open this fall, and what will the bag limit be?

Ans.: As in the case of waterfowl, mourning dove seasons are set by the U. S. Fish and Wildlife Service because they are migratory birds. Population surveys should be completed in August and the game commission can then adopt a season within the limits set. Announcement of dove seasons and bag limits should be made by September 1.

Ques.: It is common practice here to keep fish caught in the boat in "live wells" and then take home only the legal number. Is this alright?

Ans.: The law does not provide for "storage" and "sorting" of fish caught; the possession limit is quite specific.



First, grab all your gear and jump into the boat.
(It might or might not be there when you sit down!)

Here's How Fishermen Lose Friends

You say your fishing buddy just called? He's just bought a new boat, it's all ready to go, tied up at the dock and he asked if you'd like to use it?

Man, oh man, what an opportunity! So, what do you do to show your ole' buddy that you appreciate him? Well, let's see.

Commission Photos by Kesteloo



Anchors aweigh! Well, leave all the mud and grass attached—makes the seats more comfy.



Cleaning the catch? Here's a nice flat board on the boat. Man, what a buddy. Thinks of everything.

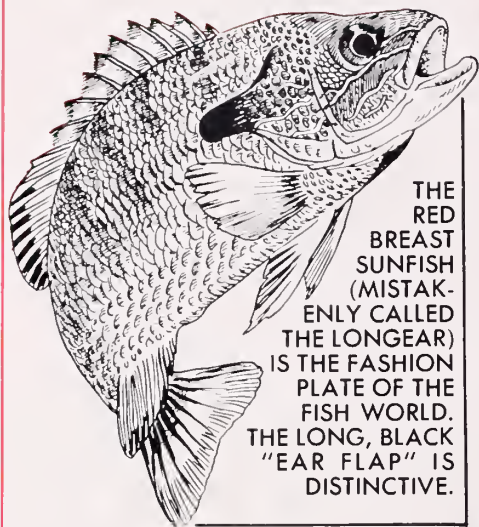


Whoops! Oh, well, you thought that oar would hold you.
(It didn't.)



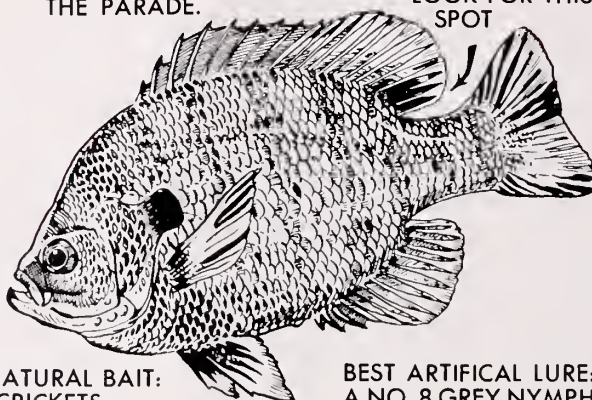
Rope? What rope? Well, the boat'll float back to shore.
Man, what a buddy.

Panfish Parade

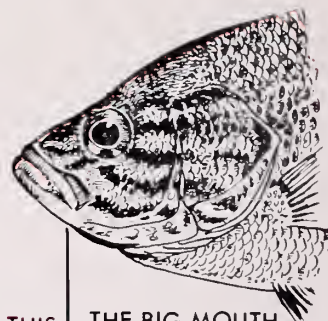


THE RED BREAST SUNFISH (MISTAKENLY CALLED THE LONGEAR) IS THE FASHION PLATE OF THE FISH WORLD. THE LONG, BLACK "EAR FLAP" IS DISTINCTIVE.

KING OF THE PANFISH THE BLUEGILL LEADS THE PARADE.



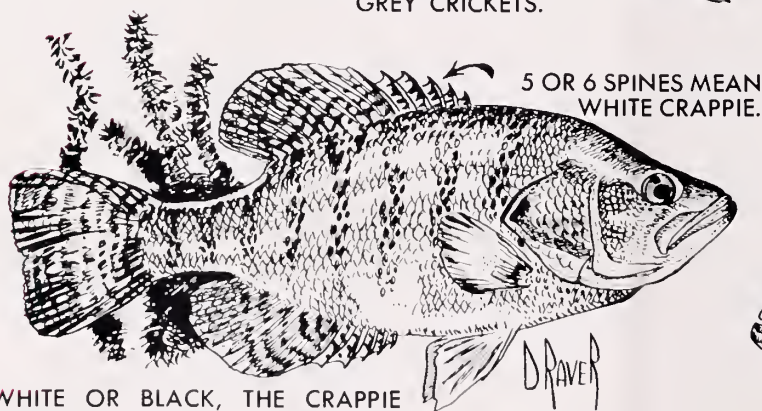
LOOK FOR THIS SPOT



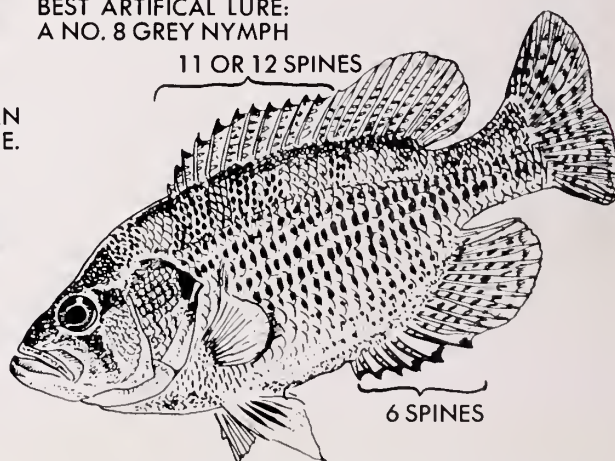
THE BIG MOUTH AND THE STRIPED CHEEK GIVE THE WARMOUTH AWAY. HIS GREATEST VIRTUE IS HIS WILLINGNESS TO BITE. DON'T STOCK YOUR POND WITH HIM, THOUGH!

BEST NATURAL BAIT: GREY CRICKETS.

BEST ARTIFICIAL LURE: A NO. 8 GREY NYMPH



5 OR 6 SPINES MEAN WHITE CRAPPIE.



11 OR 12 SPINES

6 SPINES

WHITE OR BLACK, THE CRAPPIE RATES A SPOT IN THE PARADE. MINNOWS MAKE THE BEST BAIT; STREAMERS TAKE 'EM TOO.

THE COLD-WATER REPRESENTATIVE, THE ROCK BASS, PREFERS STREAMS. TRY SMALL SPINNERS IN FAST WATER.

PANFISH ARSENAL



WET FLIES AND NYMPHS



POPPING BUGS



SPINNERS



SPONGE BUGS



SMALL PLUGS